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10/661,177	09/12/2003	Steven Carl Crusius	5569/79287	8291

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EXAMINER	
AMRANY, ADI	

ART UNIT	PAPER NUMBER
2836	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/661,177	CRUSIUS ET AL.	
	Examiner	Art Unit	
	ADI AMRANY	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 August 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 21, 2009 has been entered.

Response to Arguments

2. Applicant's arguments with respect to Petkovsek and Peplinski have been considered but are moot in view of the new ground(s) of rejection.

In the remarks (bottom of page 9), applicants contend that the Petkovsek battery output voltage is substantially increased. While the Examiner agrees that the voltage level increases from 24v to 240v, this increase in only one embodiment of the Petkovsek system (col. 4, line 59). The Examiner specifically pointed to one embodiment of Petkovsek in which the load requires only 5 volts (col. 2, lines 31-36). In this case, the up converter would not need to substantially increase the battery output voltage. Further, the "substantially adjusted" limitation was rejected under §112(2) in the non-final rejection (Sept 12, 2008) due to its indefiniteness. Applicants did not respond to that rejection and instead removed the phrase entirely (claim 10, March 10, 2009). In filing the RCE, the applicants have presented this limitation again, but do not address the §112(2) rejection.

Applicants also state (Remarks, page 10, lines 1-2) that the Petkovsek diode (D1) is not part of any external device powered by the Petkovsek system via the outputs (10c, 10d). Claim 15, however, explicitly states that the unidirectional isolation device (diode) is part of the battery backup apparatus. Only new claims 16 and 33 recite that the diode is situated within the movable barrier operator.

Regarding Peplinski, all diodes "achieve isolation." The diode bridge in Peplinski was cited as the unidirectional isolation device because the Petkovsek reference was silent as to the internal components of the rectifier. The previous claim draft (March 10, 2009) did not recite the location of the unidirectional isolation device. The Examiner agrees with applicants' description of the Peplinski relays (K1-K4). These relays, however, were not cited in art rejection of the claim. Their functionality is not relevant to the teachings of coupling a battery backup apparatus to a movable barrier operator.

Applicants argue (Remarks, bottom of page 12) that the references do not teach an isolation device with an impedance element "configured to isolate a movable barrier operator ... from the battery backup when current is not required from the battery backup." This is not a claimed limitation. The function of the isolation device is not tied to current requirements of the battery. The movable barrier operator is only isolated when the DC voltage supply does not exceed a predetermined voltage. Applicants next state that the device also isolates "the battery backup from over charging all as recited in claim 15." This limitation is also not claimed.

Lastly, it is noted that impendence is resistance. All electrical components, including the wiring connecting a converter to a battery, contain inherent resistance properties.

Claim Objections

3. Claim 15 is objected to because of the following:

a. Line 6; the limitation of the "unidirectional conduction path" actually conducts current is two directions. It appears the component should be labeled as a "bidirectional" conduction path.

b. Lines 6-8; the limitation of the unidirectional conduction path is not within the battery backup apparatus. Figure 1 clearly shows that the impedance element (29) and unidirectional isolation device (27) are within the movable barrier operator.

c. Line 10; the limitation that "the plug including a receptacle" is unclear. It appears the phrase should recite that the plus "mates" with a receptacle. The plug is normally the male connector and the receptacle is the female connector.

4. Claims 16 and 33 are objected to because of the following:

d. Line 1; the limitation in the preamble that the battery backup apparatus is "in combination" with the barrier movement operator may subject the claims to another restriction requirement. Applicants' figures show two components; a battery backup apparatus (to the right of plug 32) and a movable barrier operator (to the left of plug 32). It appears that the components do not require each other to operate. For example, the battery backup apparatus could be connected to

another system that is not a barrier movement operator and still effectively provide backup power during a power outage. No restriction requirement is made in this Office Action, but applicants are requested to carefully use the "in combination" phrase.

e. Lines 1-3; the claims recite "a barrier movement operator" and then "a movable barrier operator." It appears that these two names refer to the same component. Applicants are requested to maintain consistent terminology throughout the claims.

f. Last 10 lines of each claim is unclear and confusing. The last limitation of the claims recites “a battery charging circuit which" and then recites three distinct functions. These functions, however, are not clearly designated by wording and are not clearly separated by punctuation. For example, "a battery charging circuit which [1] receives a DC voltage from the DC voltage supply via the unidirectional/impedance conduction path which battery charging circuit [2] charges the battery ..." (emphasis and numbers added). The phrase "which battery charging circuit" appears to be unnecessary, as there is only one battery charging circuit and it was the last named limitation. Also, the phrase does not clearly indicate that "charges" begins a new functional limitation of the battery charging circuit.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 16-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 16 and 33 recite that the voltage is conducted along the unidirectional/impedance conduction path without being “substantially adjusted" by any intervening electrical device. This limitation is indefinite because there is no indication in the claims or specification of what is considered "substantial." Applicants' design clearly includes a diode as the unidirectional isolation device. It is common for diodes to exhibit a 0.7 voltage drop when forward biased. It is also noted that according to applicants’ specification, the battery (37) is charged to 24 voltage (page 5, lines 3-5). A 0.7-volt drop across each of diode (43) and diode (27) equates to a 5.8% reduction in battery voltage. Applicants have not addressed how this reduction is not a substantial adjustment.

Claims 17-32 and 33-40 depend from claims 16 and 33.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 15-16 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lucas (US 6,642,632) in view of Bullock (US 5,703,471), Perry (US 6,923,676) and applicants' admitted prior art ("APA", specification, pages 1-2).

With respect to claim 1, Lucas discloses a battery backup apparatus (fig 2; col. 2, line 21 to col. 3, line 20) connected with a load comprising:

a battery (item 20);

a battery charging circuit (18) coupled to the battery; and

a conduction path between the battery backup apparatus and the load, the conduction path including a unidirectional isolation device (26) and impedance element (18),

the battery backup apparatus connected to the load, and the battery charging circuit configured to receive a DC voltage the DC voltage supply located within the load (14, 16; col. 2, lines 53-55) through the impedance element to charge the battery when the DC voltage from the DC voltage supply exceeds a predetermined voltage (col. 3, lines 10-13),

the battery backup apparatus further configured to provide a battery backup voltage through the unidirectional isolation device to the load when mains voltage to the load fails (col. 2, line 64 to col. 3, line 4).

Lucas discloses a battery backup circuit (18, 20, 26) connected to the DC voltage supply path for a load (horizontal conductors connecting rectifier 14 with load 22). Lucas discloses that the battery backup circuit is receives charging voltage through a regulator and discharges its voltage through a diode. The regulator and diode are

connected in parallel between the + node of the battery and the positive voltage rail. Although the figure shows the regulator and diode connected to different points of the rail, one skilled in the art would recognize that the figure can be redrawn such that the cathode of diode (26) and the input of regulator (18) are connected to the same node.

Further, one skilled in the art would recognize that the Lucas regulator (18) includes internal resistance properties (i.e. impedance).

Lucas does not expressly disclose:

A) the impedance element is separate from the battery charging circuit;

B) the battery backup apparatus is connected to the load via a plug and receptacle; and

C) the load is a movable barrier operator.

A. Bullock discloses a battery backup apparatus (fig 1; abstract; col. 3-4) comprising a battery (108) a battery charging circuit (115, 120); and a conduction path between the battery backup apparatus and the movable barrier operator including a unidirectional isolation device (110) and impedance element (109). Bullock discloses a resistor on the conduction path that leads from the AC source (via a rectifier) to the battery.

Lucas and Bullock are analogous because they are from the same field of endeavor, namely battery back apparatuses. At the time of the invention by applicants it would have been obvious to combine the conduction path disclosed in Lucas with the path disclosed in Bullock in order to optimally control the operation of the battery (Bullock, abstract). Also, as discussed above, the Lucas conduction path includes an impedance element that exists inside the regulator (18).

B. Perry discloses a backup battery apparatus wherein the battery backup apparatus is connected to the load circuit via plug and receptacle (col. 3, lines 46-60; col. 4, lines 23-35). At the time of the invention by applicants it would have been obvious to combine the battery backup apparatus disclosed in Lucas and Bullock with the plug disclosed in Perry in order to allow the battery to be replaced. One skilled in the art would recognize that the battery (and other components) in Lucas can be replaced as well, although a person would be required to cut the conductors leading to the battery. Once the battery is replaced, the conductors can be soldered back together to complete a current path.

C. APA discloses that it is known to use a battery backup apparatus with a movable barrier operator. Lucas, Bullock, Perry and APA are analogous because they are from the same field of endeavor, namely battery backup apparatuses. At the time of the invention by applicants, it would have been obvious to replace any of the loads disclosed in Lucas, Bullock or Perry with the movable barrier operator disclosed in APA, since the limitation of the movable barrier operator is directed towards the end use of the battery backup apparatus. One skilled in the art would recognize that the battery backup apparatus can be connected to any device that a user would like to supply with uninterruptible power.

With respect to claims 16 and 33, Lucas, Bullock, Perry and APA disclose the battery backup apparatus in combination with a barrier movement operator, as discussed above. APA (page 1) discloses the movable barrier operator comprises a DC voltage supply and a barrier movement control. Lucas discloses the battery charging

circuit receives a DC voltage via the conduction path, charges the battery when the DC voltage supply exceeds a predetermined voltage (col. 3, lines 10-13), and a conduction path through the unidirectional isolation device connected a battery DC voltage from the first battery terminal to the DC voltage supply such that a magnitude of the battery is conducted along the path without being substantially adjusted by any intervening device along the conduction path when mains voltage input fails (col. 2, line 64 to col. 3, line 4).

Claims 16 and 33 differ from claim 15 in that the location of the conduction path is changed from the battery backup apparatus to the movable barrier operator. At the time of the invention by applicants, it would have been obvious to one skilled in the art to label the regulator (28) and diode (26) as part of the load circuit and the battery (20) as its own circuit. This interpretation is possible because defining the point of physical separation of electrical components has no effect on the system when the components are reconnected. The location of the Perry plug has the same effect of removing the Lucas battery regardless of whether that plug is placed across the +/- nodes of the battery or on the high voltage rail (topmost horizontal conductor) and the - node of the battery.

Lastly, regarding claim 33, Lucas and Bullock both disclose the impedance element is on one branch that is in parallel with the diode on a second branch.

9. Claims 17-32 and 34-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lucas in view of Bullock, Perry, APA and Petkovsek (US 4,401,895).

With respect to claims 17, 25 and 34, Petkovsek discloses a battery backup apparatus (fig 1-2; col. 2-4) including an audible signaling device (24; col. 3, lines 49-

56). Lucas, Bullock, Perry, APA and Petkovsek are analogous because they are from the same field of endeavor, namely backup battery apparatus. At the time of the invention by applicants, it would have been obvious to one skilled in the art to combine the apparatus disclosed in Perry with the audible device disclosed in Petkovsek in order to inform a user of when the backup battery is in danger of not meeting the current requirements of the load.

With respect to claims 18, 26 and 35, Petkovsek discloses an apparatus for enabling the audible signaling device in response to current flowing from the battery (detector 22 is connected to the output terminals of the battery) to the DC voltage supply of the load (node 26) via the unidirectional isolation device (D1).

With respect to claims 19, 27 and 36, Petkovsek discloses one or more visual signaling devices (col. 3, lines 49-56).

With respect to claims 20, 28 and 37, Lucas (18), Bullock (115, 120) and Petkovsek (col. 2, lines 53-68) disclose circuitry for limiting a current applied to a battery terminal of the battery.

With respect to claims 21, 29 and 38, Lucas (col. 2, lines 53-59), Bullock (col. 3, line 63 to col. 4, line 3) and Petkovsek (col. 2, lines 65-68) disclose that the circuit for limiting limits the current to an amount less than a predetermined maximum amount. Further, it would be obvious that any current value input to the battery is less than an undefined maximum current. The “predetermined maximum amount” is not tired to any event, criteria or consequence.

With respect to claims 22, 30 and 39, Petkovsek disclose cut out circuitry (22 inhibit output; col. 3, lines 36-48) for disconnecting a battery terminal of the battery.

With respect to claims 23 and 31, Lucas (fig 2) and Bullock (fig 1) disclose the impedance element and unidirectional isolation device are connected in parallel.

With respect to claims 24, 32 and 40, Bullock discloses the impedance element comprises at least one resistor (109) and Lucas (26) and Bullock (110) disclose the unidirectional isolation device comprises a diode.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ADI AMRANY whose telephone number is (571)272-0415. The examiner can normally be reached on Mon-Thurs, from 10am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jared Fureman can be reached on (571) 272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AA

10-5-09

/Stephen W Jackson/
Primary Examiner, Art Unit 2836